

## SEQUENCE LISTING

<110> FMC Corporation  
 5 Allenza, Paul  
 Gilby, Susan  
 Wong, Victoria  
 Chen, Ruihua

<120> Aphis gossypii glutamic acid decarboxylase  
 10 <130> 60301  
 <160> 4

15 <170> PatentIn version 3.1  
 <210> SEQ ID NO: 1  
 <211> 1936  
 <212> DNA  
 20 <213> Aphis gossypii

<400> SEQ ID NO: 1  
 ccactgcgtc acttccataa gtcttgatca tcgtctagcc accaacgaca cgacttactg 60  
 25 ccgtctctgc agcgaaatac gottccgaat aatccgatac agccaaccac cgtcgtgatg 120  
 aattctaagc ccgatggaca gcagtcgaag tatcagctgt caaaggatac agctggactt 180  
 30 cgttcaacag atttattacc tcataatttg tccggacagg cacaaccag agagtttctt 240  
 ttaaaagtcg ttgatattctt agtagattac attgatgacg ttaatgatag aaacgaaaaa 300  
 gtattgcatt ttaagcacc cgaagagatg ttacgactgc tacaattgga tattcccaac 360  
 35 gaaggtgtgc cattacaaaa tttaatcgac gattgcagtc taacactcaa gcatcaagta 420  
 aaaacaggac atccaagatt tttcaaccag ctttcatgcg gtctagacat cgtgtccatg 480  
 40 gctggcgaat ggctgacggc gacggctaac acgaacatgt tcacctacga aatcgctcca 540  
 gtattttattc tcatggaaaa cgtggtgtta accaagatga gagaaatcat tgggtggaag 600  
 accggcgact caatttttgc tccagggtga tcaatatcga atatgtacgc gtttttggcc 660  
 45 gcccgtcata aaatgttccc aggatacaag gaacaaggac tccactcgat caaaggacaa 720  
 ctggtcatgt acacatcaaa ccaatcgcat tattcgggta agagttgtgc atcggtatgc 780  
 50 ggactaggaa ccgaaaattg tgcgaagta cctagcgacg aaaggggccc catgatacct 840  
 tctgagctgg agcgcctcat attggaaaga aaatccaaag gccacatacc gtttttcgtc 900  
 tctgccactg caggcacgac tgttcttggg gcatttgatc caatcaacga cattgcggac 960  
 55 atttgcgaaa aatataagct gtggcttcac attgatgctg cctgggggtgg aggactgctt 1020  
 ctatctcgca agtaccgata tcccgtctg gctggcatcg aacgggctaa ctcagtgact 1080  
 60 tggaatccac acaaacttat gggcacccta ctccagtgt ccacaatata ttttcgagag 1140  
 aatggaattt tgatcagctg caaccaaag agcgcggaat acttattcat gcaagacaaa 1200  
 ctgtacgacg ttcaatacga cacaggcgac aaagttatac agtgtggtcg tcacaacgac 1260  
 65 gtgttcaagc tttggcttca atggcgcgcc aagggtaccg aaggtttcga aaaacacatg 1320  
 gatcacttga tggaactcag tgaatatatg gtggagaaaa ttaaagcatc gccagacaaa 1380

tattattttac tccttgaacc ggaaatggtg aacgtcagtt tttggtacgt tccgaagcgc 1440  
 5 ttgcgaaaca ttccacattc tccgaaacga gcggaagcc ttggcaagat cagcctatt 1500  
 ctgaaggcca aaatgatgga agccggcacg ctgatggtag ggtatcagcc actaaacgag 1560  
 ataccgaact ttttccggaa cattatatcc agcggcgagg tcaccaagga agacgttgac 1620  
 10 tttttgctgt ccgaacttga tcgcttggga caagacctct aaatcaggag gaaaagaaac 1680  
 gattaatgat aaatttcgct agtctctata atatatttag ttattttatt gtgttatgat 1740  
 15 tttgtagacg ctatgatcac gattccccgt caatggctat attcttgcca cgcgccgtca 1800  
 ataataataa taataataat aagtagccta tgctgcgttt ataatacaga taatcgcata 1860  
 ataattaata atttttaatt ttaaataatat acctatatat tataataggt gataagcgtt 1920  
 20 attccaaatc ttctg 1936

<210> SEQ ID NO: 2  
 <211> 514  
 25 <212> PRT  
 <213> aphid gossypii  
 <400> SEQ ID NO: 2

30 Met Asn Ser Lys Pro Asp Gly Gln Gln Ser Lys Tyr Gln Leu Ser Lys  
 1 5 10 15  
 35 Asp Thr Ala Gly Leu Arg Ser Thr Asp Leu Leu Pro His Asn Leu Ser  
 20 25 30  
 40 Gly Gln Ala Gln Thr Arg Glu Phe Leu Leu Lys Val Val Asp Ile Leu  
 35 40 45  
 45 Val Asp Tyr Ile Asp Asp Val Asn Asp Arg Asn Glu Lys Val Leu His  
 50 55 60  
 50 Phe Lys His Pro Glu Glu Met Leu Arg Leu Leu Gln Leu Asp Ile Pro  
 65 70 75 80  
 55 Asn Glu Gly Val Pro Leu Gln Asn Leu Ile Asp Asp Cys Ser Leu Thr  
 85 90 95  
 60 Leu Lys His Gln Val Lys Thr Gly His Pro Arg Phe Phe Asn Gln Leu  
 100 105 110  
 Ser Cys Gly Leu Asp Ile Val Ser Met Ala Gly Glu Trp Leu Thr Ala  
 115 120 125  
 65 Thr Ala Asn Thr Asn Met Phe Thr Tyr Glu Ile Ala Pro Val Phe Ile  
 130 135 140  
 Leu Met Glu Asn Val Val Leu Thr Lys Met Arg Glu Ile Ile Gly Trp  
 145 150 155 160

5 Lys Thr Gly Asp Ser Ile Phe Ala Pro Gly Gly Ser Ile Ser Asn Met  
 165 170 175  
 Tyr Ala Phe Leu Ala Ala Arg His Lys Met Phe Pro Gly Tyr Lys Glu  
 180 185 190  
 10 Gln Gly Leu His Ser Ile Lys Gly Gln Leu Val Met Tyr Thr Ser Asn  
 195 200 205  
 15 Gln Ser His Tyr Ser Val Lys Ser Cys Ala Ser Val Cys Gly Leu Gly  
 210 215 220  
 20 Thr Glu Asn Cys Val Glu Val Pro Ser Asp Glu Arg Gly Arg Met Ile  
 225 230 235 240  
 25 Pro Ser Glu Leu Glu Arg Leu Ile Leu Glu Arg Lys Ser Lys Gly His  
 245 250 255  
 Ile Pro Phe Phe Val Ser Ala Thr Ala Gly Thr Thr Val Leu Gly Ala  
 260 265 270  
 30 Phe Asp Pro Ile Asn Asp Ile Ala Asp Ile Cys Glu Lys Tyr Lys Leu  
 275 280 285  
 35 Trp Leu His Ile Asp Ala Ala Trp Gly Gly Gly Leu Leu Leu Ser Arg  
 290 295 300  
 40 Lys Tyr Arg Tyr Pro Arg Leu Ala Gly Ile Glu Arg Ala Asn Ser Val  
 305 310 315 320  
 45 Thr Trp Asn Pro His Lys Leu Met Gly Thr Leu Leu Gln Cys Ser Thr  
 325 330 335  
 Ile His Phe Arg Glu Asn Gly Ile Leu Ile Ser Cys Asn Gln Met Ser  
 340 345 350  
 50 Ala Glu Tyr Leu Phe Met Gln Asp Lys Leu Tyr Asp Val Gln Tyr Asp  
 355 360 365  
 55 Thr Gly Asp Lys Val Ile Gln Cys Gly Arg His Asn Asp Val Phe Lys  
 370 375 380  
 60 Leu Trp Leu Gln Trp Arg Ala Lys Gly Thr Glu Gly Phe Glu Lys His  
 385 390 395 400  
 65 Met Asp His Leu Met Glu Leu Ser Glu Tyr Met Val Glu Lys Ile Lys  
 405 410 415  
 Ala Ser Pro Asp Lys Tyr Tyr Leu Leu Leu Glu Pro Glu Met Val Asn

420 425 430

5 Val Ser Phe Trp Tyr Val Pro Lys Arg Leu Arg Asn Ile Pro His Ser  
435 440 445

10 Pro Lys Arg Ala Glu Ser Leu Gly Lys Ile Thr Pro Ile Leu Lys Ala  
450 455 460

15 Lys Met Met Glu Ala Gly Thr Leu Met Val Gly Tyr Gln Pro Leu Asn  
465 470 475 480

Glu Ile Pro Asn Phe Phe Arg Asn Ile Ile Ser Ser Ala Ala Val Thr  
485 490 495

20 Lys Glu Asp Val Asp Phe Leu Leu Ser Glu Leu Asp Arg Leu Gly Gln  
500 505 510

25 Asp Leu

30 <210> SEQ ID NO: 3  
<211> 21  
<212> DNA  
<213> Aphis gossypii

<400> SEQ ID NO: 3  
CCACTGCGTC ACTTCCATAA G 11

35 <210> SEQ ID NO: 4  
<211> 21  
<212> DNA  
<213> Aphis gossypii

40 <400> SEQ ID NO: 4  
CAGGAAGATT TGGAATAACG C 60